

Low-Cost, High-Yield ZnO Nanostars Synthesis for Pseudocapacitor Applications

Gisella Maria Di Mari ^{1,2}, Giacometta Mineo ^{1,2}, Giorgia Franzò ², Salvatore Mirabella ^{1,2,*}, Elena Bruno ^{1,2} and Vincenzina Strano ²

¹ Dipartimento di Fisica e Astronomia "Ettore Majorana", Università degli Studi di Catania, via S. Sofia 64, 95123 Catania, Italy; gisella.dimari@dfa.unict.it (G.M.D.M.); giacometta.mineo@dfa.unict.it (G.M.); elena.bruno@dfa.unict.it (E.B.)

² Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e i Microsistemi (CNR-IMM), Università degli Studi di Catania, via S. Sofia 64, 95123 Catania, Italy; giorgia.franzo@ct.infn.it (G.F.); vincenzina.strano@ct.infn.it (V.S.)

* Correspondence: salvo.mirabella@dfa.unict.it

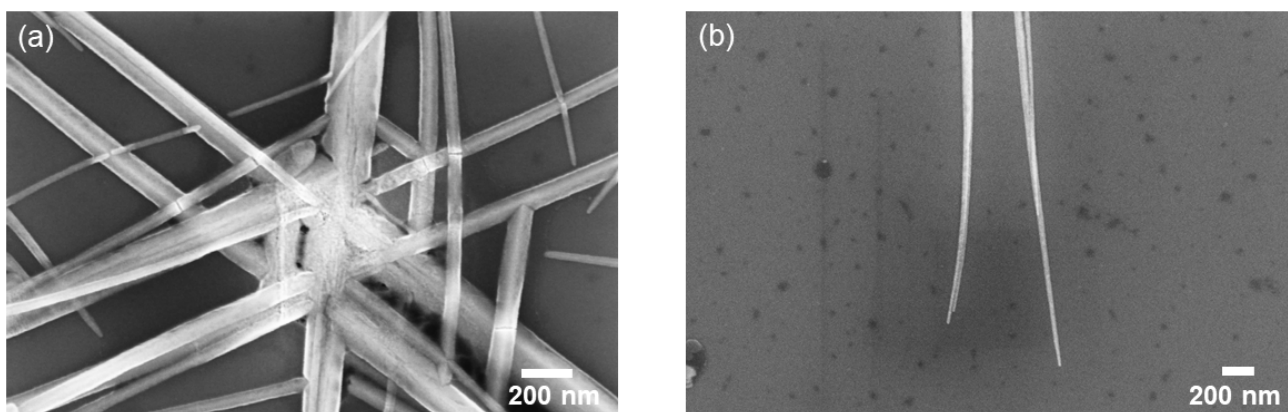


Figure S1. (a) High magnification SEM of an NS center and (b) an NS tip.

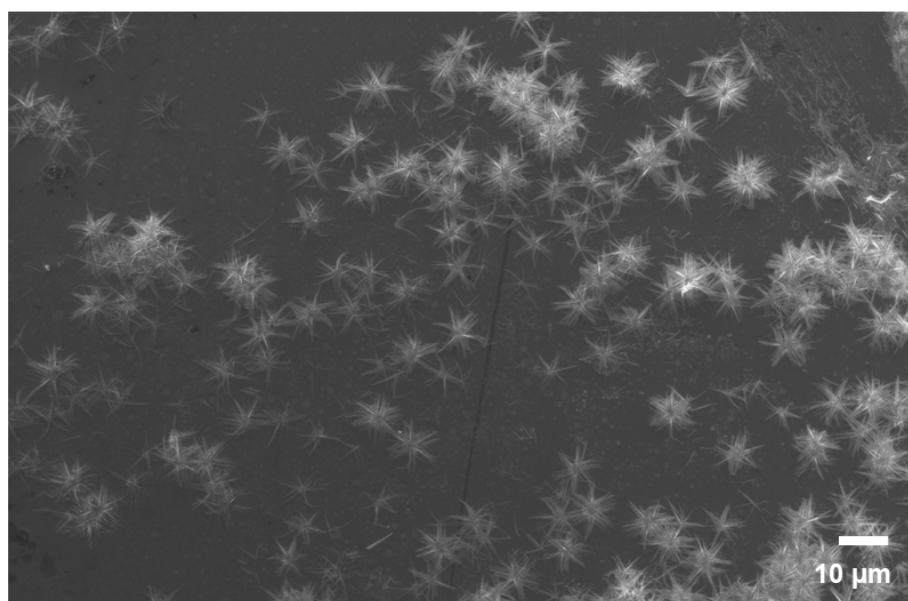


Figure S2. SEM image of AnnNSs.

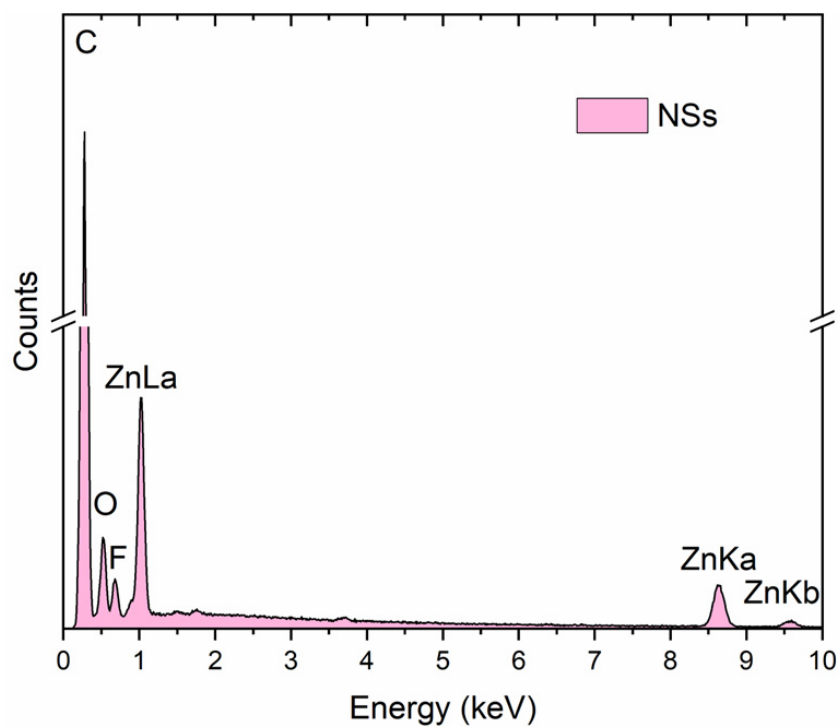


Figure S3. EDX spectrum taken in NSs grown for 10 min.

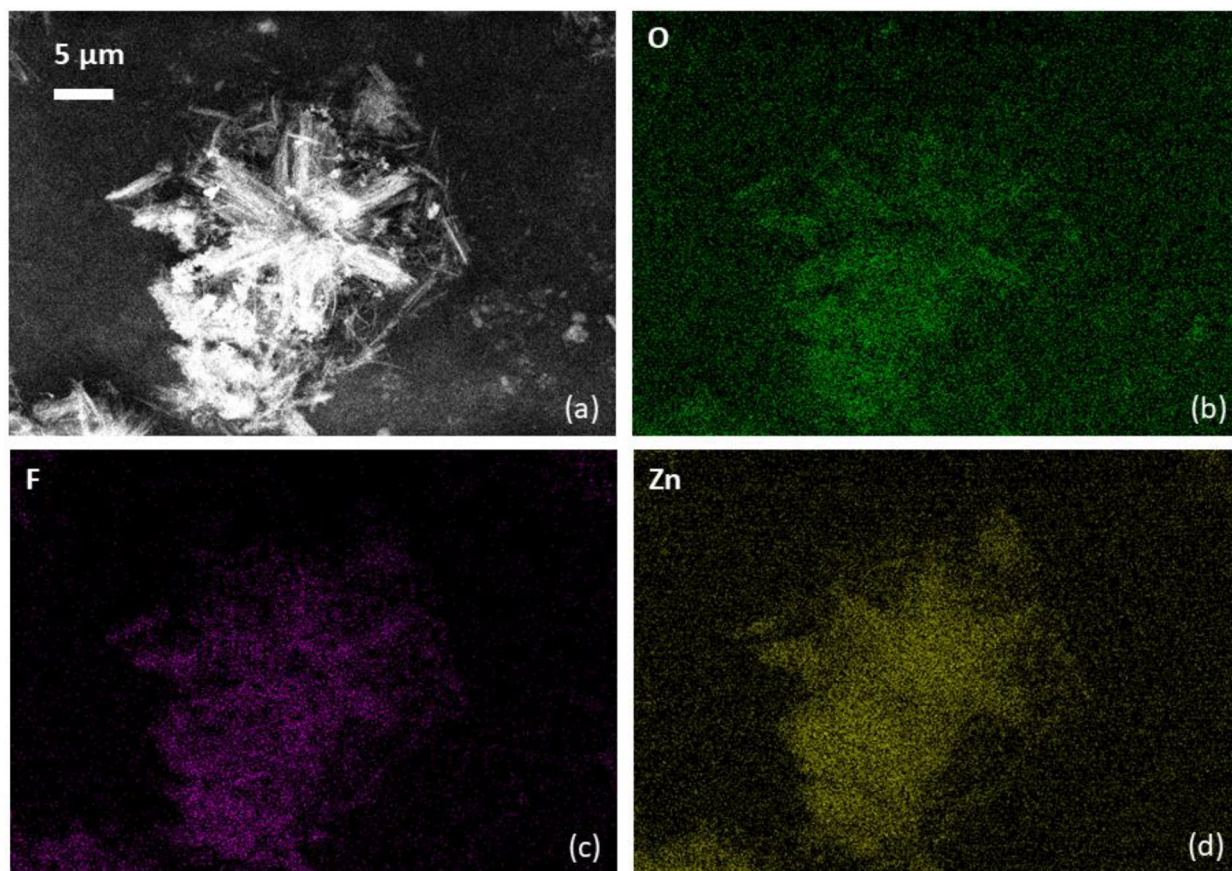


Figure S4. SEM micrograph of (a) single grown NS and (b–d) related SEM-EDX mapping for O, F and Zn elements respectively. EDX maps were acquired setting the operating voltage as 20 kV and a working distance of 8.5 mm.

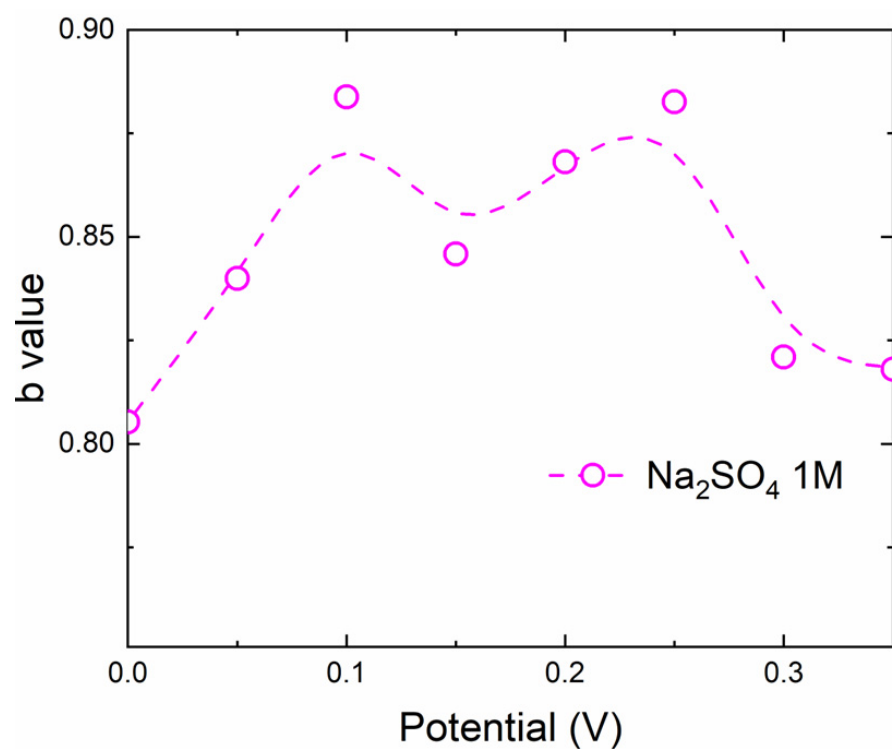


Figure S5. Extrapolated b values for 10 min NSs in 1 M Na_2SO_4 at different scan rates as a function of potential values.

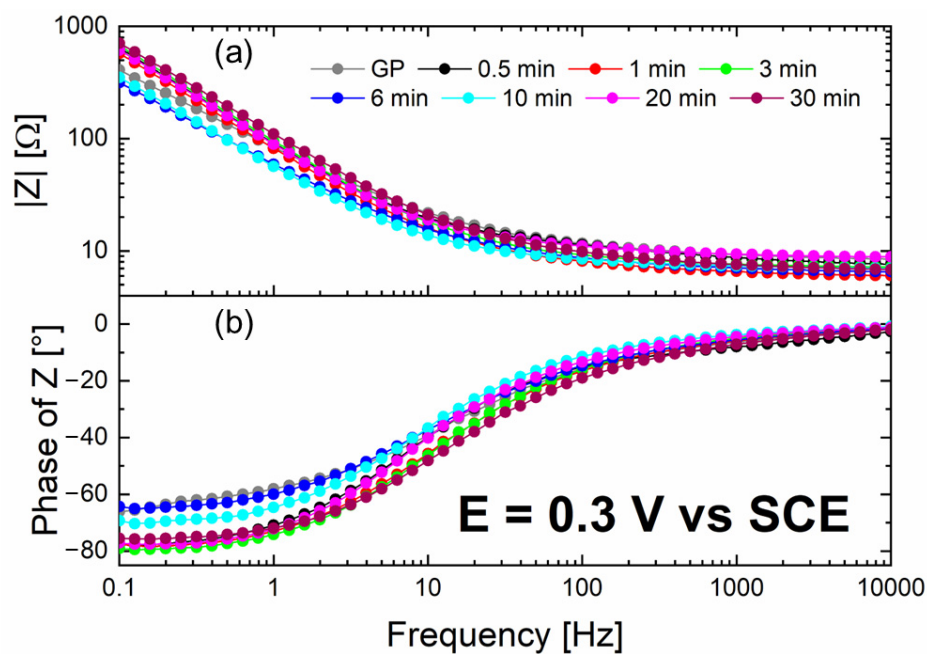


Figure S6. Bode Plot from the EIS analyses acquired at 0.3 V: (a) impedance modulus and (b) phase angle amplitudes for all growth times analyzed. Data for the GP substrate are also reported (GP grey, 0.5 min black, 1 min red, 3 min green, 6 min blue, 10 min light blue, 20 min magenta, and 30 min Bordeaux lines and circles).